From:	"Saric, James" </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE;GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=1563015DBEEE49A1AEA479C55929F0D1-JSARIC>
To:	Jeff.Keiser <Jeff.Keiser@CH2M.com>
CC:	
Date:	10/28/2013 7:39:10 AM
Subject:	FW: Post discussion evaluation of Fish trend decay rates
Attachments:	Additional Comment on Trned Rates After recent discussions with AMEC 2013-10-25.docx

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I received this from Kern. I think the bottom line is he believes the decay rate for fish trends should be 2%. I am not sure if Georgia-Pacific will have a problem with this, although I do not know based upon a 2% decay which remedies will meet RAOs within a 30 year time frame. Also, I am not sure if there will be a significant time difference between remedies 3 and 4. We will have to wait and see how GP responds to EPA/MDEQ comments.

Please share with Frank and Patty.

Jim

From: John Kern <kernstat@gmail.com> on behalf of John Kern <jkern@kernstat.com>
Sent: Friday, October 25, 2013 1:52 PM
To: Draper, Cynthia E; Curtis, Emmet F
Cc: Saric, James; Bondy, Garret E; Paul Bucholtz; King, Todd W.
Subject: Post discussion evaluation of Fish trend decay rates

Cynthia and Emmet,

Thanks for the discussion yesterday. After our call I did a little more homework and I think we may want to revise the range of decay rates slightly and also may be able to thin down the number of combinations necessary. The attached is a rough look at this question and where I am ending up after getting a little more up to speed on the trend estimates in the FS etc.

The punchline is a small change in the range of decay rates I think are well supported with a best estimate of about 2% and uncertainty bounds ranging from (UCL95=no decay to 5.3%). Note I'm suggesting using UCLs rather than "scenarios" because the added information related to probability is important in helping people to understand our weight of evidence for each value.

In particular, we are saying that we are very confident that there will be decay in concentrations—95% sure it will be greater than 0%. The no decay scenario is very unlikely and should not be considered equally with the 2% decay rate which is our most likely scenario.

Similarly, the 5.3% decay scenario or faster is also highly unlikely given our understanding of the data, and again should not be considered equally with our best case number of 2% or so.

My basis for these ranges of values are in the attached memo. Also I suggest limiting the number of cases to just three cases based on our best estimate of 2% decay considered for the three candidate step-downs we discussed. The range of outcomes for each of the three cases should be communicated as confidence bounds, so that for a value like time to clean there are 3 rows in the table containing best estimate and two additional columns indicating the LCL and UCL each of which are possible but much less likely as discussed above. I think communicating these bounds as equally likely scenarios is a mistake and also resulting in cumbersome presentation of many combinations in the report.

So, see the attached and I'm open to discussion as usual. I understand that there is more than one way to do this.

John

Note: I have cc'd a modest group I expect will be interested, but am not intending to elevate the question.